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REMARKS

Claims 1-25 were pending of which Claims 1, 8, 15, 22 and 23 are independent claims.

Claims 1-25 were rejected under 35 U.S.C. § 102(e).

Regarding Rejections

Before discussing the cited reference, a brief review of the Applicant's disclosure may be helpful.

A longest prefix match lookup table allows searching with longer search keys including search keys of different lengths such as the 32-bit IPv4 and 128-bit IPv6 addresses.

The lookup table described includes a plurality of mappers. The mappers are indexed by successive portions of a search key and partial indexes from prior mappers, to output mapper data consisting of a route index for the search key or an indication that a further search is required and a partial index to subsequent mapper.

The lookup table also includes a partial index feedback loop by which a mapper is indexed in multiple passes with multiple successive portions of the search key. The route index corresponding to the search key is stored in a single location in one of the plurality of mappers.

The length of the search key is variable. The search key may include a 32-bit IPv4 address or a 128 IPv6 address. If the search key includes a 32-bit IPv4 address, the route index corresponding to the search key is found within a first search of the plurality of mappers. With a 128-bit IPv6 address, the route index may be found within a first search of the mappers or in a subsequent search through the mappers. The partial index may be a subtree index. (See Abstract, Fig. 3B and Fig. 5.)

Regarding Rejection under 35 U.S.C. 102(e)

Claims 1-25 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Varghese et al. (U.S. Patent No. 6,011,795). Applicant respectfully traverses the rejection.

Cited prior art, Varghese is directed to a method and apparatus for speeding lookup times by reducing the number of distinct prefix lengths to be considered in a lookup table. A central feature of the invention of Varghese is to "...reduce a set of arbitrary length prefixes to a

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predefined set of lengths using a technique that we call controlled prefix expansion." [Col. 7 at lines 58 – 60] In the application of the controlled prefix expansion technique, Varghese constructs a data forwarding table wherein all prefix lengths are multiples of a specified stride length, commencing with a database having prefixes of arbitrary length. [Col. 13 at lines 17 – 24] The resultant data forwarding table can be used to reduce the number of memory accesses required for a worse case address lookup to the number of strides comprising a fully specified address. [Col. 15 at lines 33 – 41]

Varghese's discussion of a lookup table having addresses specified at a multiple of a particular stride length does not teach or suggest the applicant's claimed "plurality of mappers". Varghese instead teaches a single lookup table having a plurality of particular prefix length entries corresponding to a multiple of a given stride length.

By way of contrast to Varghese, the Applicant's disclosed invention allows for use of arbitrary length prefixes in the lookup tables, having no requirment to expand prefixes to fit a predefined stride length. Applicant's invention instead uses mappers "indexed by successive portions of a search key and partial indexes from prior mappers". (See Claim 1). A search of the applicant's disclosed mapper results in either a route index or a partial index which is used for a subsequent search of another mapper in the lookup table. In the system discussed by Varghese, the lookup table includes a plurality of prefix entries wherein each prefix entry has a prefix that is a specified multiple of a stride length. As Varghese does not discuss at least the applicant's claimed mappers or the use of partial indexes from prior mappers, and as Varghese is directed to an entirely different method of lookup table indexing from applicant's invention, applicant submits that applicant's invention as claimed in claim 1 is patentably distinguished over Varghese et al.

Claims 2-7 and 24-25 are dependent on Claim 1 and thus include this limitation over the prior art. Independent Claims 8, 15, 22 and 23 and claims dependent on claims 8 and 15 include like limitations distinguishing the cited art.

As such the § 102 rejection of Claims 1-25 is believed to be overcome.

Accordingly, the present invention as now claimed is not believed to be anticipated by or made obvious from the cited art or any of the prior art. Removal of the rejections of claims 1-25 under 35 U.S.C. 102(e) and acceptance of Claims 1-25 is respectfully requested.

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CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue.

Respectfully submitted,

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(4:PFDesktop\:ODMA/MHODMA/HBSR05::Manage.587074.1)
JMS/cmm
November 14, 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	David A. Brown		
Application No.:	09/886,659	Group:	2141
Filed:	June 21, 2001	Examiner:	Shingles
Confirmation No.:	4746		
For:	METHOD AND APPARATUS FOR LOGICALLY EXPANDING THE LENGTH OF A SEARCH KEY		

CERTIFICATE OF MAILING OR TRANSMISSION
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or is being facsimile transmitted to the United States Patent and Trademark Office on.

11/14/05   *Christina M Sweeney*
Date   Signature

Christina M Sweeney
Typed or printed name of person signing certificate

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is <u>a Response After Final</u> for filing in the above-identified application.

[ ]   Small entity status of this application under 37 C.F.R. 1.9 and 1.27 has been established by a Small Entity Statement previously submitted.

[ ]   A Small Entity Statement to establish small entity status under 37 C.F.R. 1.9 and 1.27 is enclosed.

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The claims fee has been calculated as shown below:

	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	PRESENT EXTRA
TOTAL	25	MINUS *	25	0
INDEP	5	MINUS **	5	0
[ ] FIRST PRESENTATION OF MULTIPLE DEP. CLAIM				

* not fewer than 20
** not fewer than 3

SMALL ENTITY

RATE		ADDIT FEE
X	$25	$ 0
X	$100	$ 0
+	$180	$ 0

TOTAL= $ 0

OR

OTHER THAN SMALL ENTITY

RATE		ADDIT. FEE
X	$50	$ 0
X	$200	$ 0
+	$360	$ 0

TOTAL= $ 0

The Application Size Fee has been calculated as shown below:
(Effective for cases filed on or after December 8, 2004)

Actual Sheets (Including current amendment)	Highest No. of Sheets Paid For (At least 100)	No. of Additional Units Required (Increments of 50 sheets)

SMALL ENTITY

Rate	Total Amount Owed
X $125	$[ ]

OTHER THAN SMALL ENTITY

Rate	Total Amount Owed
X $250	$[ ]

Payment Sufficient for up to
[ ] Sheets

Petition for Extension of Time

[ ]   Applicant hereby petitions to extend the time to respond to the [   ] dated [   ] for [   ] month(s) from [   ] to [   ]. The appropriate fee is set forth below.

[X]   The undersigned attorney petitions the Commissioner for Patents to extend the time for filing a Notice of Appeal in reply to the Office Action made Final dated July 13, 2005 for one months, from October 13, 2005 to November 13, 2005 under 37 C.F.R. § 1.136(a).

Applicants' Attorney is not filing a Notice of Appeal at this time but is filing an Amendment After Final concurrently herewith.

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Please charge Deposit Account No. 08-0380 for the following fees:

[X]	Petition for one month Extension of Time	$_____120_____
[ ]	Claims Fee	$_____
[ ]	Application Size Fee	$_____
[ ]	Other Fees:	
	_____	$_____
	_____	$_____
		TOTAL: $_____120_____

A check is enclosed in payment of the following fees:

[ ]	Petition for [ ] month Extension of Time	$_____
[ ]	Claims Fee	$_____
[ ]	Application Size Fee	$_____
[ ]	Other Fees:	
	_____	$_____
	_____	$_____
		TOTAL: $_____0_____

[X] Please charge any deficiency or credit any overpayment in the fees that may be due in this matter to Deposit Account No. 08-0380.

Respectfully submitted,

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